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THE ALLEGED INFERIORITY OF AMERICAN PLATES, FILMS AND CAMERAS.

A FEW weeks ago an article appeared in the *American Amateur Photographer* of New York, in which English plates, films, and cameras were lauded to the skies, a sweeping comparison being drawn to the detriment of American-made goods of a similar character.

When we first glanced over the paper we were surprised at two things:

First.—How it happened that the editors of the journal in question ever permitted the paper to be published, as the sweeping charges are certainly incorrect and misleading, as well as unjust to the great photographic industries of this country. Then again, the editor of an American magazine should have known that statements like those contained in the paper would be seized upon with avidity by foreign papers, to injure and crush out the sale of American cameras, plates and films in other countries.

Second.—How it happened that previous to the date of his paper this same individual had never let an opportunity pass in print, and when showing his slides, to laud and praise the identical make of American films and plates which he now so ruthlessly and energetically condemns in the sweeping assertions made in his paper.

To clear up the mystery which surrounds the latter enigma, and at the same time resent the general aspersion cast upon one of the chief photographic industries in the United States, THE AMERICAN JOURNAL OF PHOTOGRAPHY instituted an investigation which led to rather surprising results.

The facts of the case in point are: among the shoal of amateur photographers who invaded England during the past summer was the gentleman in question, and who by the way can hardly be called a representative member of Philadelphia Society. After his arrival on Albion's hospitable shores he evidently travelled on photography in general; in fact, photography seems to have been worked for all there was in it. When he left this country, according to his own admission, he had several American outfits, and was fairly loaded with sensitive material, the same which he had so frequently praised on former occasions. Yet shortly after his arrival comes the charge of alleged imperfections, etc., in American films, and the advice to tourists, "How unnecessary it is to lug a trunk full of films and plates across the water, when we can procure as good and often better on the other side, and at slightly lower price," a statement which is evidently aimed at every American dry plate manufacturer, with the intention of injuring the whole dry plate industry of the United States to the advantage of foreign made goods. It is hard to believe that any American could be found to inflict an injury of this kind at home products, the excellence of which is acknowledged by even the very men with whom he hobnobbed during his late visit.

Taking up the subject of Celluloid Films, we will give two quotations from the same individual, both referring to the same lot of films, with the query, Which is correct?

From the *American Amateur Photographer*, November, 1892, page 505.

. . . My photographic material consisted of cut celluloid films tor the two larger cameras, and glass plates for the hand camera. The films were from a manufacturer whose products had served me *fairly well* in the trips of the two preceding years . . . etc.

[Signed]

. . . . . .

Philadelphia, October 31, 1892.

From the *Photographic Times*, issue of December 5th, 1890, page 604.

To the Editor of the *Photographic Times*:

DEAR SIR:

During the past summer, while in Europe, I made a number of exposures on Carbutt's Celluloid Films (6¼ x8¼), and I write now to express my great satisfaction with their many good qualities. The emulsions, both Special and Orthochromatic, were exceedingly fine, and have yielded rich negatives, crisp and full of detail, while the percentage of defective films was quite small.

I made in all some seven hundred exposures, and although they are not yet all developed, I am satisfied that my loss from defects in the films will not exceed five per cent. and may be even less.

In this connection I wish particularly to bear strong testimony to the special excellence of the orthochromatic films for landscape work, especially when long distances were included. Not only did these films give much better differentiation of color values than the ordinary plates, but also brought out the distance much better. In Switzerland I made numerous exposures on many difficult subjects of this character, and the results obtained *far excel* anything I have ever been able to obtain with the ordinary plates.

Another great advantage these films possess is their extreme lightness and portability, no small item in rapid traveling. It would have been utterly impossible to have taken an equal number of glass plates of the same size, but the Celluloid films could be taken anywhere. I am so *well satisfied* with the results that I shall in future *use the films exclusively*, for I am fully convinced that I can get better work out of them than with the old "s and by" glass plates.

Yours respectfully,

. . . . . .

Philadelphia, Nov. 28th, 1890.

Issue of May 29th, 1891, page 261.

. . . . . , of Philadelphia, sailed for the Scandinavian Peninsula, May 27th, supplied with 42 dozen 8 x 10 Carbutt Orthochromatic Films,

Next, referring to the glass plates used for the hand camera, we find in the same paper the following statements, which we parallel with a letter written by the same person two weeks previous, October 15th, 1892, the original of which is in our possession, the italics being in the original.

From the *American Amateur Photographer*, November, 1892, page 505, line 23.

. . . My plates of the same maker were equally bad, etc.

October 31, 1892.

OFFICE OF

. . . . . .

. . . . . Street,

PHILADELPHIA, Oct. 15, 1892.

DEAR . . . . . :

I send by bearer some of my Eclipse films, and would like you to try developing them. The trouble seems to be mainly that they are insensitive. I cannot understand it altogether, for some of the 4 x 5 plates *supposed* to be of the same emulsion (2685) used for hand camera work on instantaneous exposures, and kept fully *three months* before being developed, come up all right, and if anything rather *over*-exposed. Do you think there is any possibility of your people making a mistake and putting up two different emulsions? I cannot understand why the emulsion should keep sensitive on glass, and loose its sensitiveness on celluloid. I think it is a matter that it would be well for you to look into a little. I have noted on the envelope containing the films the data of their exposures.

Yours sincerely,

. . . . . .

We now come to the question as to what caused this change of front in this wavering amateur. It seems that his praise, condemnation and advice, so freely ventilated in print and elsewhere, was not altogether a spontaneous outburst in the interest of the art of photography, but the whole matter apparently simmers down to an every-day matter of dollars and cents, at least in the case in point.

Prior to this amateur's departure for England last summer, it seems he wrote to at least one manufacturer in this country "that

as the laborer is worthy of his hire, and as it is a matter of business with him, he asks would the manufacturer be willing to increase the discount to him on the films as a recompense for making mention of them in any address *he might make in England*, or when writing for the journals."

This demand for remuneration and proposition to recommend material to our English brethren, which he now states "had served him only *fairly well* in the trips of the two preceding years," is decidedly novel, and will no doubt be news to such members as received the Philadelphia amateur with "many kindnesses and attention" when in England. The reply which he received, with probable rebuffs elsewhere, however, evidently brought about the change of front, and at once all American photographic materials are condemned.

The following reply was sent to the amateur tourist for his request of increase of discount:

PHILADELPHIA, April 29th, 1892.

DEAR . . . . . .

Your letter of yesterday regarding the packing of films shall be attended to according to your wishes, and be wrapped in the old way. I wish very much for you to send me the envelope in which these films that you speak of as being in your possession for over a year and found to keep good are, as my black envelopes have been made from two kinds of paper, one dyed with aniline and the other with a mineral pigment, and I am desirous to know which has the least injurious effect on the films. Referring to that part of your letter touching on the question of remuneration for services that you might render in the mentioning of my films in any paper that you might read, I agree with you that it is best to be frank in this matter, and I will here state that the large discount I have given you, and the extra care I have taken to furnish you goods to be satisfactory, was, as far as I understood, to be reciprocated by such mention as you would make, and which I acknowledge in the past you have very kindly done.

As my advertising expenses through the various channels is now a very heavy one, I must decline to make any further concession in discount, and will continue to furnish you the films as heretofore.

Trusting that this will not interfere in the least with our friendship and business relations, and that we may possibly have a good time in London. I remain, yours very truly,

. . . . . .

By some strange coincidence, upon his arrival in England all the American films and plates were discovered to be bad, a calamity which, by natural inference, must have been caused by failure to obtain an extra five or ten per cent., and the paper in the November *Amateur* is the result, in which it states:

. . . "Alas! however, the films were soon discovered to be exceedingly bad especially the quick emulsion, but not before much valuable work had been lost. They were spotty and full of pinholes, and seemed to lose their image unless developed immediately after exposure. A change was therefore made to English-made films, and a summer's continued use of the films made by ——, of London, has thoroughly convinced me that our American makers of films are 'not in it,' to use a slang term, in comparison with the English article."

Now, in view of the laudation of English films and materials in the paper published over the signature of this same gentleman in *American Amateur Photographer*, November, 1892, together with extra care being taken to mention the names of the British makers, it would be interesting to know if the "*laborer received his hire*" in these cases, and if so, whether such paltry *douceur* justifies an attack upon American-made photographic materials, and a direct attempt to injure an American manufacturer who simply refused to be influenced any further.

The celluloid film industry in this country is a strictly American enterprise, which is not confined to any single manufacturer, and is of far too much importance to be ruthlessly tampered with at home. American films have a well-deserved, world-wide reputation, which was earned by merit, only after years of labor and great expense, and it will take something more than the opinions of an amateur tourist to shake the faith of the photographic public in their excellence and superiority.

Then as to the statement, after praising three makes of English cameras, that

"With the advent of the 'Kodak,' the American photographic mind has run entirely to hand and folding cameras, while the tripod camera, the true instrument for correct and artistic work, has been almost entirely neglected,"—

is so far from being a fact that it is hardly worthy of notice. The products of such makers as the Rochester Optical Co., Eastman Company, and the Blair Camera Company, and others, are too well known at home and abroad to be affected by vague

statements by an amateur tourist. However, as there is supposed to be a reason for all things, perhaps the officers of some of the above named companies can explain the why and wherefore of this parting fling at American cameras.

What weight is to be attached to the gentleman's opinions, who is by no means a photographic authority in America, but only an amateur photographer, may be judged by comparing the extracts above given.

THE CONCENTRIC LENS.

BY W. K. BURTON.

IMPERIAL UNIVERSITY, TOKYO, JAPAN.

AMONGST the innumerable lenses with new names that are issued, it is an unexpected pleasure to come across what is really a new *lens*. The last two years have been remarkable in the history of photographic optics, inasmuch as three actually new lenses have been invented in Europe during them. Two of the new inventions have for their object the reduction of, or total eliminating of, the one defect that has been left almost untouched since the plano-convex simple lens with a diaphragm some distance in front if it was first used. I refer to curvature of field.

Two of the new lenses have, as I say, for their object the elimination of this defect, and it is my good fortune to have been able to thoroughly test one of them, and as,—although this lens has created quite a sensation in England,—I have seen little or nothing about it in American photographic literature, I think a short description of it may interest your readers.

The lens I refer to is the concentric lens, the invention of Dr. Schroeder of London, manufactured by one of the most famous English opticians. The other lens referred to, which I have not had the opportunity of testing, but the results of which I have seen and can testify to as remarkable, is the "anastigmatic" of Karl Zeiss.

First a short description of the lens that I have tried itself. It owes its peculiar properties to the new Jena glass, which is working such a revolution in optics generally.

Up to the present time the achromatization of photographic lenses has been accomplished by the use of one kind of glass with a high refractive power and a low dispersing power in combination with another having a low refracting power, and *relatively* high dispersing power. I understand that, in the case of the concentric lens, one kind of glass is used with a high refracting power and a low dispersing power, in combination with another having low refracting power and *absolutely* higher dispersing power.

With glass having such qualities it would be possible to have an achromatic lens, outwardly simply a disk of glass with two parallel flat sides, and such a lens would have, amongst other things, the property of focusing oblique pencils at a much greater distance from the lens than axial pencils.

In the concentric lens, advantage of this property is taken. The lens consists of two combinations, the two surfaces of which are not, it is true, flat, but are *concentric*—struck, that is to say, from the same center. In all other forms of wide-angle rectilinear lenses, there are two meniscus combinations, the inner surface struck with a longer radius than the outer.

A sketch of the section of the concentric lens is given here.

Now as to the properties of the lens, its most remarkable property, and that distinguishing it from all others that I have ever used, is that the field is *absolutely* flat. That is to say, focusing an object in one plane at right angle to the axis of the lens, and including even a wide angle, *there is no difference whatever in the definition at the center and at the sides of the plate.*

Mr. W. E. Debenham has raised a question recently as to what really constitutes flatness of field, and he holds that the field of a lense is flat if it brings axial and oblique pencils, from objects all at an indefinite distance, into focus on the same plane,—a lens that would, for example, bring the vault of heaven into focus all on one plane, and he points out that a lense that focuses an object in one plane at no great distance on a plane, is, taking flatness

as above defined, really convex towards the lens field. Mr. Debenham is probably right as to the strict meaning of the word, the more especially as, if I am not mistaken, a lens that will focus a plane at one given distance, on a plane, will have a concave field for more distant planes, a convex one for nearer, always towards the lens. The reason is, that in the case of near objects, a little difference in the distance of the object has a great effect in the distance from the lens at which the rays come to a focus, so that the difference in distance from the lens of the center and the edges of a plane object, make an appreciable difference in the distance from the lens at which the rays focus, tending to concavity of field towards the lense (ordinary " roundness of field "), whereas beyond a certain distance there is no appreciable change in focal length for any greater distance, so that, beyond a certain distance, a plane surface at right angle to the axis of the lens, and a spherical surface with the lens as a center, would focus on the same field, whether flat or curved, whatever kind of lens were used. If, therefore, we speak of a lens that gives a flat field, when a plane at right angle to the axis of the lens is focused, as having a flat field, we should, strictly speaking, have to state at what distance the plane is from the lens.

Practically, however, what photographers most want, is a lens that will give a flat field when photographing objects in a plane at right angles to the axis of the lens, and at no great distance off, whatever be the scientifically correct term for the field of such a lense.

Photographers will probably be more interested by a description of the actual performance of the lens than by any discussion as to the precise meaning of " flatness of field," so I immediately go on to describe the tests I made.

In the first place let me state that the lens that I have works at *f*-16[1] as a maximum aperture, but that, at this aperture, although it gives perfectly even definition all over the plate, that definition is nowhere absolutely crisp. It gives a softness such as

[1] I understand that, since the lens here referred to was sent to me, the makers have reduced the maximum aperture to *f*-22, finding, probably, that photographers did not pay sufficient attention to the precautions that have to be observed when focusing a lens showing marked spherical aberration, and adjusting the stops.

is got with "diffusion of focus" lenses, which is very pleasing to some eyes. It is necessary to stop down to nearly *f*-22 to get perfect crispness.

This introduces the necessity of taking certain precautions in focusing with this lens. Thus it will not do to focus with full aperture, and then to insert the stop to be used. This would have the effect of lengthening the focal length, and either of throwing the whole subject out of focus, or of making a more distant object than that intended, be in sharpest focus—in either case spoiling the effect aimed at.

In this connection I think I shall not be violating confidence if I quote a letter written to me by a member of the firm manufacturing the concentric lens.

"It is impossible to focus the 'concentrics' with larger aperture "than *f*-20, as there is a certain amount of aberration centrally "which makes it difficult to know, on the ground-glass, when "you have the best point of focus, when a very large stop is "used. . . . If you focus with the smaller stop I have mentioned, "and open out to *f*-16 afterwards, all the central aberration van-"ishes, or rather spreads equally over the plate, and you will obtain "a nice, evenly-lighted and softly-defined result over, say, a 12x10 "plate."

I do not agree with this. I have tried the method described, and have found that I got better results, with stops over *f*-20, by focusing with the stops to be used, racking the lens in and out several times, so that the image was thrown distinctly out of focus one way, than the other, and selecting a mean between them. For all stops smaller than *f*-20 I have focused with *f*-20.

After some tests with an "artificial star," made by illuminating the bulb of a mercurial thermometer by a strong light, which would probably not be of interest to readers, a subject was chosen for actual experimental exposures.

The College of Science, Imperial University of Japan, is a brick building about 40 feet high, with cut granite, square columns, cornices, coping stones, corner stones, window jambs, sills, and lintels, and it presents a facade of about 120 feet long. The numerous strongly marked horizontal and vertical lines, beside

the texture given by the bricks, make it an admirable "test object" for flatness of field.

For the sake of comparison, a 12-inch focus wide-angle rectilinear lens, made by one of the first English opticians, was used.

A 12x10 camera was placed about 130 feet distant, opposite the middle of the facade of the building, which thus occupied nearly the whole of the lower half of the ground-glass, almost coming to the very corners.

With both lenses exposures were made with *f*-16 and with *f*-22, focusing for the centre of the ground-glass, and the results were compared.

With *f*-16 the concentric gave a perceptibly *soft* image, but there was *absolutely* no difference in the definition of the centre and that of the extreme edge. With the same aperture, the wide-angle rectilinear gave a mere *patch* of cutting sharpness in the middle, all else being out of focus. In fact it was now for the first time, by actual comparison, that I appreciated how very small an angle[2] a "wide-angle lens" really covers sharply.

With *f*-22 the results were the same, but that in this case the definition in the case of the concentric lens appeared absolute all over the plate. With the wide-angle rectilinear the patch of sharpness was somewhat increased, but the falling off at the edges and corners of the plate was still very noticeable.

Plates 18x12,—larger than those the concentric lens is intended to cover,—were next tried, the camera being brought nearer the building, so that again the facade filled nearly the whole of the lower half of the ground-glass. The angle subtended by the diagonal of such a plate with a 12-inch focus lens is over a right angle.

It was found that the concentric lens covered a circle of very nearly 20 inches diameter, with *equal* definition in the case of *f*-16, with apparently absolute definition in the case of *f*-22.

With *f*-32 the concentric covered the whole plate quite sharply.

[2] It is to be observed, however, that had the wide-angle lens been used for photographing the building for ordinary purposes, the effect could have been considerably improved by a compromise, the focusing being done from a point some distance from the ground-glass. For *comparison*, however, it was right to focus for the centre in each case.

It needed a stop *f*-64 to do the same with the wide-angle rectilinear.

One thing was very noticeable in comparing the photographs taken at *f*-22 with the two lenses. Between the building and the camera the ground was covered with grass and wild flowers. In the negative taken with the concentric lens, the grass immediately in front of the building was the sharpest along the whole length of the facade. In the case of the wide-angle lens this was the case only in front of the middle of the building, and the line of greatest sharpness could be traced on the grass sweeping in towards the camera on each side.

The result of these tests is to show that a lens has been produced which, whilst fairly rapid, is to all intents and purposes *absolutely* flat in the field, and practically free from astigmatism or any other defect that might interfere with marginal definition. To have worked out such a lens is undoubtedly a great feat in optics, and, moreover, one that leads to the production of an instrument that will be of real practical utility.

One thing I have seen claimed for the concentric lens that I cannot quite understand. It was claimed for it by Dr. Wenham that it gave greater depth of focus than other forms of lens. Of course, if this means anything, it means *with the same focal length and aperture*. Now I fail, either from theoretical consideration, or from practical tests, to find that the concentric lens has greater depth of focus than any other lens, when used with the same focal length and aperture. Indeed, it seems to me that depth of focus is absolutely fixed by focal length and aperture. Perhaps Dr. Wenham's meaning was that, with large apertures, the lens, not being free from spherical aberration, gives a "diffusion of focus" effect, which increases apparently this depth of focus. It is notable that, when Mr. Debenham questioned Dr. Wenham on this subject, the latter simply refused to discuss the matter at all!

Daguerreotype.—A demonstration of the Daguerreotype process is announced before the National Photographic Society in London. Mr. Wm. England is the lecturer.

THE ADULTERATION OF PAPER STOCK.

BY JULIUS F. SACHSE.

IT IS acknowledged by most all photographic authorities that the most vital question of photography, viz.: that of permanency of the finished product, depends mainly upon the neutrality of the medium which forms the support of the sensitive film, *i.e.*, the absence of any deleterious chemicals or properties which in longer or shorter time will destroy the print upon the surface.

During the past year we have on several occasions given our readers an insight into the component parts of the paper stock of the present day, also of the effects of various commercial gelatine and glycerine mountants, which are imposed on the photographic public by unscrupulous manufacturers.

Referring back to the question of paper and mounts, almost every day reveals the use of new, strange, and heretofore unthought of substances which have been forced into service to produce "pure linen paper stock," photographic as well as commercial. When these varied materials are taken into consideration the photographer as well as the author and scientist of today may well ask themselves: What are we working for? Certainly not for the future.

In an official list of vegetable substances which rank as paper making materials, four hundred and two different substances are enumerated. During the last half century the whole history of the paper trade abroad, as well as at home, seems to have been a series of efforts to obtain a material which would produce a cheap article—a sacrifice of quality, purity and fibre to a reduced selling price with increased profit to the makers.

When the gradual evolution in paper-making from rags to straw was accomplished, with the attendant adulteration of sulphite of lime and clay, many thought that the limit of "patent" paper had been reached. Not so, however, for then came the change from mechanical methods for the production of paper

pulp to the deleterious but cheaper chemical process; and lastly the sulphite wood pulps, which in turn are adulterated with ground soapstone and talc, both mineral substances of a similar nature, monopolize the great bulk of the paper stock of commerce; many of the fine printing papers used for book and other work consisting of fully one-half of their bulk of these powdered minerals, if not adulterated with more deleterious substances.

Few persons have the slightest idea of how great proportions this industry for the supply of adulterants for paper has assumed. There are different mills throughout Pennsylvania exclusively for grinding soapstone into flour. The chief seat for the production of the finer grades of talc flour or "filling matter" is in the vicinity of Gouverneur, a town in northern New York. The talc deposit here is about eight miles long by one mile wide, and is of an exceedingly fine quality. Ten quarries are opened, some reaching a depth of 400 feet on the slope. The total output of the mills in this locality alone last year was considerably over fifty thousand tons of the finished product, the cost averaging about $3.50 per ton.

How much of these thousands of tons of powdered rock which are annually produced go into photographic stock is an open question.

So is also the effect produced, when these mineral and chemical adulterations of the paper pulp are brought into contact with fermenting animal or vegetable mountants. They certainly cannot be conducive to the permanency of the photographic product.

Perhaps the Photographic Congress Auxiliary of the World's Fair at Chicago will enlighten us on this subject of photographic paper and its adulterations, and suggest some means of obtaining a supply of suitable stock for the various photographic purposes which will reduce the destroying action from that source to a minimum, and thus relieve the art of the charge that all photographic results are but ephemeral.

STREET CHARACTERS.

XANTHUS SMITH.

OUR art contributor, Mr. James F. Wood, has succeeded in securing striking pictures of a number of picturesque characters, with whom the residents of our city are familiar, and who indeed form a type of characteristic life to be met with in most large cities.

The one presented to our readers in the present number of our journal, we all know well, having been interested in her from our boyhood. The old apple-woman, with her quaint old-fashioned face, weather-beaten and patient in expression, from enduring the vicissitudes of weather, pinned down as she is to a narrow field of action beside her basket, or rickety stand, sometimes extemporized of an empty packing box, which latter, when she can secure it large enough, occasionally forms a shelter, on hampered space of sidewalk. Patient she is, and must be, and yet she possesses a ready tact that will easily run into what may quite if not more than match us, if we enter into repartee with her, or take her upon the wrong tack, for her daily intercourse with the public, in trade, has sharpened her business qualities, and in her own way she is quite a merchant.

No less picturesque in character than the apple woman, and certainly to be dealt with more gingerly, is the fish woman, already presented to our readers.* Muscular and sharp-visaged, and erect from carrying her weightily-laden tray upon her head; we must not be too critical of her wares, or we may find ourselves no match for her, either in language or in muscle. Not being considered a savory member of society we will leave her, letting each of our readers complete the picture by recalling what neither the writer nor the photographer can convey,—her shrill cry of "Any Shad?" any "Cat-Fish."

Less commonly met with and much more a subject of curiosity to us is the brightly-garbed Italian woman who exhibits the little birds at various places along the sidewalk. A strange occupation

* See September, 1891.

this, and, one would think, an uncertain and meagre way to make a living. We can imagine the hours of patient work necessary to train these little birds, and then, while exhibiting them on the crowded thoroughfare, must there not be a constant uneasiness lest one or more of the brilliantly-plumed creatures take a final departure for a roam in the expanse of nature?—as we wonder very much they do not do, especially on the fine summer days when the air is balmy and nature has on her tempting garb. The matter of greatest curiosity to us is, that we have never yet seen one of these bird-showmen receive a penny from anyone, giving one the impression that their work is entirely gratuitous,—which would scarcely be likely.

We always find a picturesque subject in the "Knife-Grinder," with his grindstone and treadle arrangement, whether he be hurrying along bending under the weight of the contrivance by which he turns out a living, or standing at his occupation, surrounded by a group of ragged urchins, watching with curious interest the swiftly revolving wheels and freely flying sparks and water.

The "Knife Grinder" has been a favorite with artists for many a day. All lovers of art are familiar with David Teniers' "Knife Grinder," an admirable picture, giving us a distinct impression of this roving artisan as he appeared in Holland more than two hundred and fifty years ago, and we have him as he plied his vocation in France at a much later period, represented in a beautiful character sketch by the eminent painter Watteau, this sketch now being in the museum of the Louvre. Watteau had a good subject, and loses nothing in his treatment of the great old cocked hat and big lapeled coat with tears and patches, which would make a seemingly out-of-place attire for such occupation, but all fits in quaintly and appropriately even to the old sabot, which is balanced over the grindstone and serves to supply the water to the latter from a reed in the toe of it.

Another grinder, universal, and always plentiful, is the grinder of street music. The Italian with his box organ and monkey is one of the most familiar and attractive of this class, and an admirer of picturesque character can nearly always see something of interest to him in the gaping group of gamins attracted by the

THE OLD APPLE WOMAN.

NEGATIVE BY
JAMES F. WOOD, PHILADELPHIA.

not always dulcet strains of the pipes and the antics of the monkey. Like the knife grinder the wandering musician has been considered a fitting subject by the artist at various times for portrayal. A most picturesque example is by the Flemish painter, Ostade, and represents strolling musicians with a hurdy-gurdy and violins performing at the door of a rustic cottage or inn, and the character displayed in the faces and figures of those, old and young, who have congregated as listeners, is very remarkable, and gives us a striking idea of the appearance of Flemish low life at that time. Certainly very ugly.

To return to our own musicians; in the case of the old woman seated upon the sidewalk, and the lame man, as depicted by Mr. Wood,* who hobbles along and dispenses his wretched feeble notes in one continuous grind, it is a matter of surprise to us that they do not die of the very monotomy of their own miserable chant. Think of any intelligent being, cold, hungry, and tired, as those street musicians must often be, and subjected withal to the ceaseless whines of one of those wretched little organs. Can a more trying situation be imagined?

More, many more, there are of the strange characters who prefer to wander the streets, and suffer the vicissitudes of weather and the rebuff of the rude, than avail themselves of the shelter of some charitable institution, or when able, to fill some more certain and comfortable occupation in in-door retirement.

The peddlers of suspenders and handkerchiefs, of cough drops, and the various curious little toys that ingenious makers are constantly bringing forth, are all familiar to us, together with the bootblacks, newsboys, and match-sellers, whom we will pass over as belonging to a separate class; but there remain yet for us to speak of, the very quaint colored people, generally women, who seat themselves upon market days, at some sort of detached point upon the curb in proximity to the market, and sell horseradish, persimmons, when in season, and various "yarbs." We imagine that these people come from "de Jarseys." Let them come from where they may, however, they always form a most picturesque group, bundled up as they are with much queer clothing, and sur-

* See May, 1892.

rounded by baskets, trays, and kettles, and the curious things which they gather together to bring as an accompaniment or addition to their principal stock in trade. As catnip is good for cats, so we suppose some of these things are good for some people, who here find them.

If we pretend at all to be artists we cannot properly overlook the Italian vendors of plaster casts, for if they are not themselves artists, they are certainly vendors of art, and if we have a speck of feeling in our souls for art we must often be attracted by the beautiful productions which we see thrust at us by these persistent extollers of the beauties of form. We have in this itinerant class, though, the dealers in high-class art and those who pander solely to the tastes of the vulgar, for the man that we meet in the suburbs or making excursions into the country with his tray filled with rankly painted parrots, and prize fighters, and the like, would not dare to show himself in studios or better city offices, where such vile but frail productions would run the risk of demolition with mahlstick or inkstand. We will hope soon to be able to present a successful picture of one of these art-loving Italians, as also of the Flower Girl, with whom we will conclude, for although girls selling flowers upon the streets are not so common in our city, "The Flower Girl" undoubtedly oftener forms the subject of artistic portrayal than any of the characters previously spoken of, and naturally enough, as there is always a large share of interest and sentiment attached to her and her offerings, and united with the picturesqueness which naturally forms her tout ensemble, there may be as much beauty as the artist is capable of portraying. The large hat, flowing hair, expressive eyes and pouting lips, together with the winning, beseeching expression, all attract us to the "Flower Girl."

The following recipe has been given as an excellent one for removing tarnish from gilt frames: Take one ounce of cooking-soda, beat it thoroughly with the whites of three eggs. Blow off the dust with a pair of bellows. With a small brush paint the mixture all over the gliding, which will speedily become quite fresh and bright.

AUTOMATIC WATER STILLS.

EDGAR RICHARDS.

WHAT is the use of photographers purchasing salts that are chemically pure when they promptly proceed to adulterate them in making their solutions by employing impure water? If chlorides, sulphates, bicarbonates, organic matters, etc., when present in re-agents lessen their market value and introduce chemical reactions which we seek to avoid in photographic manifestations, why use the ordinary water supply, which is open to these objections, when pure water can easily be obtained at a comparatively trifling cost?

Rain, snow, and melted ice are the purest natural water, but are liable to surface contaminations, and may be used for making solutions where distilled water is unavailable. The water supplied to most of our eastern and lake towns does not, it is true, contain more than 10 troy grains of total solids in one U. S. gallon of 231 cu. in., but in the West and South the amount of such impurities is much greater, owing to the larger quantities of lime and clay which the rivers, streams, and springs in those parts of the country contain.

Outside of chemical laboratories the use of distilled water in preparing solutions is extremely rare. Within the last two years two automatic water stills have been introduced on the market, which, although costing more than most amateur photographers may care to spend, are exceedingly convenient and economical in use; being self-regulating, they do not require attention when once started, and being readily taken apart are easily cleaned. They are self-contained, and it is only necessary to attach them to some firm support, as a table or wall, and connect the Bunsen burner by rubber tubing to the gas supply, the inlet tube with the water supply and the outlet tube with the sink, turn on the water and the gas, light the latter on top of the burner, so that the flame is blue and not yellow or smoky, place a jar or other receptacle for the distilled water, and the still is ready to work as

long as the gas and water supply are turned on. The boiler must be cleaned from time to time, to remove clay and lime deposits.

FIG. 1.

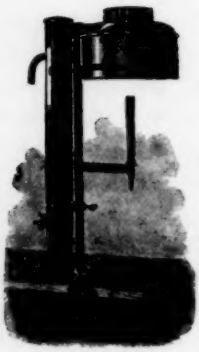

FIG. 2.

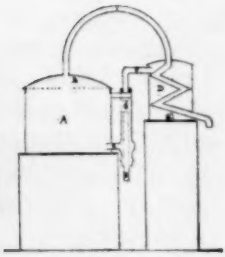

FIG. 3.

The "James" automatic still, fig. 1, will produce 12 gallons of distilled water per 24 hours and costs $20.00, and the "domestic" water still, fig. 2, is made in two sizes, producing 13 and 32 gallons of distilled water per 24 hours, and costing $15.00 and $25.00 respectively.

These stills may be obtained from most dealers in chemical supplies, and I have no doubt that the publishers of this journal would undertake to procure them for such of its readers as may desire them. For those of a more economical turn of mind the following sketch, fig. 3, may be useful as giving the idea for a still which the ordinary copper-smith can make; no claim for originality is made for the design.

The boiler may be made of a tin-lined copper stewpan, 8 inches in diameter and 6 to 7 inches high, with a dome-shaped top, soldered or brazed on, preferably the latter. The condenser may

be made of zinc, or copper, 4 or 5 inches in diameter and about the same height, and contains the coil of three or four turns of a half inch black tin pipe. The whole rests on two iron tripods, and is heated by a large size Bunsen burner or a small size Fletcher solid flame burner. In the section which is taken along the middle line, parallel to the front, A is the boiler, B is the steam dome to which the block-tin pipe, C, of the condenser, D, is attached. E is the ½ inch inlet for water, at right angles to distilled water inlet, F is the ½ inch outlet pipe for the heated water of the condenser, passing loosely into the top of the ⅞ inch to 1 inch glass constant level tube, G, of the Regulator. H is the ¼ to ½ inch inner glass or metal tube, the height of which determines the water level in the boiler, and to whose end the rubber tubing is attached to carry off the waste water to the sink. K is the metal tube making connection with the interior of the boiler, and whose lower end is so shaped as to firmly hold the short piece of rubber tubing through which the regulating tube H slides. This still, like the two others, will work automatically.

These stills should be cleaned at least once a week.

LESS PRAISE, MORE ART.

CHAS. HOWELL MILLER.

IN looking over the numerous pictures that embellish the pages of photographic annuals and papers, I am frequently very much amused at the inartistic talent displayed, and yet you will find the descriptive reading of them by the editors full of praise for the high artistic talent displayed by the photographer, when it only requires a glance by one who understands anything of art to see that the attempt at it is a dismal failure. They are nothing more than common every-day photographs, which no doubt were taken by persons who had not the faintest idea of art principles, but photographed the subject more to secure a perfect negative than any other aim, and no doubt at

the time having no thoughts that the picture would ever appear in an annual or photographic paper; but when the negative has been developed they are so pleased with it that they must at once send off the first print to the editor of their favorite paper, to let him know what they can do in making a good negative. It so happens if the sender happens to be a subscriber he is at once asked for the loan of the negative, and in a few weeks his picture appears in one of the leading papers with a long note by the editor praising the artistic talent and ability displayed by the sender. The main object appears to be to produce a photograph and give it a name, anything so it has a name, and half of the time the name has not the slightest relation to the subject.

I saw a picture published in a well-known annual some few years ago, of a man dressed in his Sunday clothes, which consisted of a high silk hat, light overcoat, patent-leather shoes and a high white collar. He was standing about a fourth of a mile from the sea, or what appeared to be the sea. He was leaning on a cane, facing the water, but in the picture appeared to be looking down on the sand at his feet. This picture was called: "Looking Seaward." I often tried to find out what relation the name had to the subject, for the picture conveyed no idea to the beholder that the man was looking seaward, for in the picture it was nothing but a blank white sky, and the water was so far distant that no one could tell whether he was standing on the edge of a prairie or the top of a mountain. The man's clothes did not convey any idea of the sea, so why should they give it that name.

Now this is where the whole foundation of art lies:

To put a name on a picture one must show the relation the name bears to the subject and also show what relation the subject has to the name and its surroundings, for in the case of the man he did not belong to the sea, nor did he convey any reasons to the beholder why he should be looking at the sea.

Would it not have been better to have in place of the man an old fisherman, with his oilcloth hat and old clothes and boots, leaning on an oar down by the water; the sky filled with heavy

clouds, and the sea falling on the beach, filled with life and animation, with a vessel in the distance. This would at once convey meaning and expression to the main subject, for the fisherman, as his clothes and general appearance denoted, informed the beholder that he belonged to the sea, and then the waves coming in on the beach and the heavy clouds foretold a storm. The name conveyed the idea that he had an object in looking seaward, as he might have been watching the vessel, or the approach of the storm, or he might have been waiting for his boat and was looking to see if he could discover its whereabouts. So it is in every picture which shows real art,—each and everything connected with it bears some relation to the other, and photographers should be careful what name they give to a picture, and first discover the relation it has to the subject and what it means to express to the beholder. Hundreds of this kind of pictures are published every year in the photographic papers, and I think it is about time the editors gave us a little more art and less praise.

The other day I saw a picture in one of the papers, of a dog sitting on a table with his head hanging down, and gazing out the window, I thought. It was called, "Want a Piece?" There was nothing in the picture that would express to the beholder what the meaning of the name was, or what relation it had to the dog, for there was no object but the dog in the view, and he might have been like some dogs,—wanted a piece of anything you gave him. There was not even the expression in the face which you always see in a dog's when you go to give him something. From an art standpoint the picture was ridiculous, and yet the editor of the paper praised the high and artistic talent displayed in it.

Another great mistake editors make is in calling pictures taken in a gallery by a professional photographer of children from six to ten years of age, difficult subjects, when I think they are very easy to take in an ordinary room with an exposure of sometimes nearly three-quarters of a minute. The only difficult part is in the posing, and where a man has the use of a sky-light, back-

grounds, etc., with an exposure of one or two seconds, I think he should not judge it to be difficult.

I have pictures of children that were taken with an exposure of one minute, and the only difficult part I found was in making them stand so long. With a few seconds exposure there should be no trouble unless the child is frightened to death at the long hair and face of the operator. My pictures of children I consider equal to any I have ever seen in photo annuals or papers.

What we need is a little less praise and more art in the illustrations of the photographic press.

THE PROPER HANDLING OF PLATES AND NEGATIVES.

BY GEORGE KNOWLTON.

WE are continually seeing articles on lighting, posing, developer, papers, printing, toning, blisters, etc., etc., but we see very little on how to handle a plate so as to make a good negative, and how to handle a negative so as to get a good print. Very few photographers seem to realize, that to obtain first class negatives, care must be taken in handling them.

A great many operatives have a boy to change the plates, and if the boy is not back with the plate-holder ready for the second exposure, by the time the second pose is made, the operator calls out in a harsh tone of voice, "Plates," and, perhaps (mind, I say perhaps), after the sitter is gone, gives the boy what he calls the "deuce" for being so slow. This causes the boy to rush for all he is worth; he yanks the back of the holder out, drops it, and grabs the plate, and carelessly chucks it into a box for exposed plates—no matter how many plates there are in the box for it to hit against, perhaps cutting slits in the film; if not, there will be particles of glass broken off and get between the films and cause little fine slits and scratches, perhaps so fine that they are not noticed before development; but when the negative is dry, the slits and scratches are cuts clear through the film.

But, we have left the operator's assistant in the dark room with his plate-holder empty, and the operator is liable to call out "Plate," so we will return and see how he puts the plate into the holder. In all probability he will grab a plate out of the box, put it into the holder with a bang—not stopping to even make an attempt at dusting it—bangs the holder door to, and rushes out to the operator, all the time expecting to hear that call, "Plate." This same rush and carelessness goes on whenever there are sittings to be made; when all are finished, the operator and his assistant tell a few stories, perhaps get a chew of tobacco in the corner of their mouth (you know some think the dark room a capital place for a chew, as they can expectorate very copiously in the sink without any trouble), slowly get their aprons on, and by 4.15, or perhaps 4.30 p.m., they are ready to proceed with the development. They have, perhaps, from thirty to fifty cabinet negatives to develop, and they must be ready to leave the studio by 5 p.m. (all employees in a photograph gallery think they must be through work and ready to go by that time), and in order to accomplish this they must contrive some way to develop their plates quickly. This is usually done by getting a large tray that will hold from eight to sixteen plates; into this they douse the developer in its concentrated form; then run in water from the tap until they think they have enough to nicely flow over the plates; no matter how cold or how warm the water may be, it always goes in just the same. Now they put in the plates; perhaps the assistant this time makes an attempt at dusting them; the operator puts the plates into the tray, commencing at one corner, and as he puts in a plate, tips the tray a little to cause the developer to flow over it; this goes on until there are, say, five or six plates in the tray. Then the operator is kept pretty busy, sliding one plate from on top of another, where it has slid during the process of "dipping" the last plate put in. During all this time the plates have been bumping together, causing little particles of glass to be chipped off the edges and get on the films.

With such proceedings as these, is it at all surprising that their negatives are full of holes, slits and scratches? But this

does not finish the punishment of the poor negative. When it is developed, it is taken from the tray, held under the tap, and perhaps rubbed with the hand to remove any sediment that may have gathered on it. Then it is placed in the fixing bath, which is liable to be full of dirt, and perhaps so old and discolored that it is impossible to see the negatives when they are placed in it. They remain in this until they are fixed, then are again treated to another dose of washing under the tap, and more rubbing, then put in the washing. This is done in many ways; when washed they are set up to dry. In the morning when they come to be taken from the drying racks, some of them that have been fortunate all the way through are clean and good, others that got a little punishment are fairly good, but have a few small holes and scratches, but some of them are sights, simply full of imperfections, so bad that it is almost impossible to spot them so they can be used, and when the operator is asked what the matter is, he simply says, "Dirty plates." There, I think I have described quite clearly how these scratched, spotted negatives are produced. So I will now describe how good, clean negatives can be and are made.

We will go right back to the operating. Instead of having a plate-holder that will hold only one plate, we will get two, each holding two single cabinets, or one 6½ x 8½, or 8 x 10, as we may desire. We will have these filled, being very careful that the holder and camera box are both free from dust, and when the plates are put in the holders we will dust them carefully, and also be careful not to hit the edges together. By so doing we avoid many splinters of glass getting on the film. When the party comes up we will carry both holders out to the operating room. Now we have four plates, or plates for four cabinet exposures. In this way the assistant is at liberty to move the camera when the operator may designate while making the pose. When this is done, the operator focuses, the assistant places the holder in place, and all is ready for the first exposure. This is made and we proceed as before, the operator posing, and his assistant moving the camera and accessories as directed. When the exposures are made, the assistant takes the holders to the

dark room, removes the plates, and refills the holders. When the exposed plates are taken from the holder, they should be placed in pairs, films together, with a separator between, if to be laid down; if stood on end, the separator is not as necessary, as there is very little pressure to cause them to hit together. We are now ready for the next sitter. There has been no rushing, or banging of the plates; therefore, there will be no cuts or pieces of glass in the films when we develop. This same quiet careful work goes on until the day's exposures are all done.

Now for the development. Always have your developer carefully prepared by some good formula, of which there are many, and if you use a developer in a concentrated form, requiring the addition of water at time of developing, do not add water direct from the tap, as it is never the same temperature as the mixed solutions, but have several large bottles of water sitting in some handy place in the dark room (the bottles in which you get your sulphite of soda are just what you want); by so doing you have all your different solutions, water, plates, trays, etc., at the same temperature, and much better chemical effects are obtained thereby. For developing, we will have, say, three 8 x 10 trays; these are as handy for developing two single cabinets or two 5 x 8, and will also be what you want for any other sizes, up to and including 8 x 10.

When you are ready to proceed with the developing, carefully rinse the trays, let the assistant get the plates, carefully dust and place them in the tray; now have sufficient developer in your graduate to nicely cover the plates, and with one careful sweep of the hand, flow it over the plates; be sure that the entire surface of the plates is covered at as near the same time as possible; by so doing you avoid developer streaks. Now you can place another tray on top of the one you have in your hand, and proceed as before. Let the assistant start another tray in the same manner, and by occasionally changing trays the man developing can carefully watch all six of the plates. When one trayful is developed, let the assistant again fill it. In this manner you have six plates developing all the time, and you will be surprised to see how soon you can get through with fifty negatives.

Now a word in regard to the rinsing of the developed plates before placing in the fixing bath. Do not hold it under the tap and allow the water to run over it, as by so doing you are liable to start it to frill and injure it by the force of the water running on it, but put it into your washing box for about a minute or two, then take out and place in the fixing bath; it will be thoroughly rinsed, with no danger of frilling or scratching.

For your washing box, have a box so to wash the plates standing on the edge, and have your fixing box the same. Allow the negatives to remain in the fixing bath several minutes after they are fixed, to ensure permanency in the negative. When taking them from the fixing bath, examine closely, and if there is any dirt or spots on the negative, carefully remove them with a tuft of cotton wool. When this is done, place the negative in the washing box, and allow it to wash for an hour. This will ensure a thorough elimination of the hypo. When washed, place in a rack to dry. Do not place in the sun or near heat to dry, as they will be liable to melt and dry in streaks, but dry them in a room where the temperature will be even, and give them plenty of time to dry.—*The Canadian Photographic Journal.*

Decorative Use of Pictures.—It is strange that pictures, especially landscapes, are not more utilized in a decorative way, and that millionaires, instead of giving *carte blanche* to some expensive decorator, should not try to bring into their homes some lovely, sunny bit of seashore or forest to gladden the eyes during the long and dreary days of winter. Fancy a little white room, for instance, finished in panelled wood, with a glowing landscape full of warmth and color framed into the wall, one of those modern creations that are so full of light and atmosphere that it would seem as if the glad outdoor summer breezes were brought into the room itself. Or in a more sombrely finished apartment a vista might be opened into the deep glades of a cool woodland "flecked with leafy shade and sunshine." What possibilities of pleasure to tired eyes such rooms would give! These, moreover, would not be more costly than the ornamentations of a modern decorator.—*New York Tribune.*

HOW TO PRESERVE LENSES.

LENSES should be kept in a pure dry, atmosphere, away from dust and damp. These impair the polish of a high glass instrument, and by scattering some of the light which passes through, produce a degree of "fog" in its images and negatives.

Use an old clean cambric handkerchief to remove dust. Never rub the glass, nor use whiting, leather, paper, or anything likely to contain a "suspicion" of grit; but only brush it lightly with such a smooth, soft duster as the clean old cambric handkerchief. A visible speck on a lens is of less importance than an invisible general imperfection of polish, or a film of fine dust or moisture.

Lenses should not be left before a fire or in the sun to become unduly heated; nor should they be so cold when used in a damp atmosphere that moisture is condensed upon their surface. It is difficult to drop a lens without damaging it, though the effect may be outwardly invisible. A damaged lens should be repaired without delay.

In screwing together the parts of a lens, or putting the lens in its flange, turn first in the wrong direction until the fittings snap together in the position for starting, then reverse the motion to screw them together.

To guard against a frequent cause of fogged negatives, and to secure the full effect of a high-class lens, the inside of every camera should be quite black, and free from any trace of shininess. This is a very important matter, commonly neglected, but needing constant attention.—*Photo. News Almanac.*

Platinum Residues.—To recover platinum from old platinotype developing solutions, the vessel containg them is heated until the liquid reaches a temperature of 180° Fahr., when a saturated solution of ferrous sulphate in the proportion of one part to four of the oxalate is added. A black precipitate, consisting of finely divided metallic platinum, is thrown down. The supernatant liquid is drawn off, and the precipitate, after being washed, is converted into chloroplatinite or sent to the refiner. It is certainly advisable to save developing solutions, but the acid clearing baths do not contain sufficient platinum to render their preservation of any use.

COMPOSITE HELIOCHROMY.

Who recognized the true principle? What different "Authorities" have said.

LEON VIDAL.

(Who gives all the credit to Cros and Du Hauron, and denies that any new principle has been discovered.)

"We do not say that three negatives should be prepared, because it is possible that a larger number may be necessary." "Theoretical accuracy is far from being attained. The number of monochromes is insufficient. . . . We must use at least four *clichés*." "Must not for a moment think that three negatives . . . are sufficient to produce every effect."[1]

DR. H. W. VOGEL.

(Who claims to have discovered the true principle in 1885, and to have practically solved the problem.)

"I propose . . . that instead of a single sensitizer (as with Ducos), several be employed, and each by itself in a separate plate; a sensitizer for red, one for yellow, one for green, one for blue-green. One for blue is not necessary, as bromide of silver is itself sensitive to blue." . . . "If the gradations in the green are not sufficient, it is easy to introduce a malachite green or analogous optical sensitizer. Yes, it is recommended to introduce more optical sensitizers in the system; a greater number of gradations will thus be secured."[1]

"Later on Mr. Ives adopted the same ideas," etc.[2]

F. E. IVES.

(Who claims the discovery of the true principle, and denies that it was recognized by either Cros, Du Hauron, Vogel, or Vidal.)

"Pictures which do truly show the light and shade and all the colors of the object photographed can be produced by a process of this character, which is not based upon Brewster's theory of color, but upon that of Young, Helmholtz and Maxwell. . . . According to this theory there are . . . only three primary-color sensations. All color sensation is supposed to be due to the excitation of three kinds of nerve-fibrils in the eye. . . . After much experiment . . . I finally arrived at a new principle . . that of producing sets of heliochromic negatives by the action of light-rays in proportion as they affect the sets of nerve-fibrils in the eye," etc.[1]

"Making sets of negatives by the action of light-rays in proportion as they excite the primary-color sensations," etc.[2]

"Maxwell's diagram is a graphic representation of the result of careful photometric measurements of the effect of the spectrum rays upon the primary sensations." "The carrying out of my new principle, according to Maxwell's measurements, therefore, involves the production of one negative by the joint action of the red, orange, yellow and yellow green rays, in definite proportions, to represent the red sensation; one by the joint action of the orange, yellow, green and green-blue rays, in definite proportions, to represent the green sensation, and one by the joint action of the blue-green, blue and violet rays, in definite proportions, to represent the blue sensation." "The plates and screens are correct when they will secure negatives of the spectrum showing intensity curves substantially like the curves in Maxwell's diagram."[3]

"A plate taken with cyanobromide of silver behind a red glass . . . is to be printed with cyanine."[3]

"The negative belonging to the yellow monochrome . . . ought to reproduce equally all the red and all the blue." "Negative corresponding to the red . . by means of an orthochromatic plate sensitive to yellow and used without a color screen. . . . The blue and yellow will produce a powerful effect."[2]

"The primary colors, yellow, blue and red."[3]

"We take this opportunity of protesting against the claims put forward by Cros and others, who have worked on similar lines, that they have succeeded even indirectly in solving the problem of photography in colors. . . . We, at any rate, have never seen a successful instance. We think, on the contrary, that a photographic selection of colors, however well it may be carried out, ought to

"That the optic sensitizer . . . form the printing color . . . or, if the sensitizer itself cannot be employed for the purpose, a color spectroscopically nearest to it be substituted."[4]

"The great problem of photography in natural colors is no longer a problem. It has been solved after my principle. . . You will see proofs of the process very soon."[5]

"A picture made by the joint action of red, orange, yellow and yellow-green rays, but chiefly by orange, instead of being projected by a similar mixture of spectrum rays, is projected by red rays only. Similarly, the picture made by orange, yellow, green and green-blue rays is projected by green rays only. That is the true principle, yet nothing of the kind had ever been suggested."[4]

"In pigments, Prussian blue, magenta red and aniline yellow."[5]

. . . "The set of three photographs made as I have indicated . . . contain, in a permanent form, such a graphic record of the natural colors that, in order to reproduce them to the eye, it is only necessary to super-pose the three positive images, either upon a screen, or upon the retina of the eye—the one representing the red sensation with pure red light, the representing the green sensation with

be assisted by some retouching. . . . These corrections often consist only of a few blockings out on the negative or erasures on the printing surface."[4]

[1] *Anthony's Photographic Bulletin*, 1891, pp. 699, 728, 757.

[2] *Anthony's Photographic Bulletin*, 1891, pp. 727–28.

N.B.—The negative belonging to the yellow monochrome should represent the fundamental blue violet sensation, and it would be fatal to allow the red to act in producing it. The negative belonging to the "red" monochrome should represent the fundamental green sensation, and it would be fatal to allow the rays of the blue end of the spectrum above F½G to act in producing it. F. E. I.

[3] *Anthony's Photographic Bulletin*, 1891, p. 727.

N.B.—Even Cros and Du Hauron rejected this theory, although they never recognized essential features of the Young-Helmholtz theory. F. E. I.

[4] *Anthony's Photographic Bulletin*, 1891, p. 699.

[1] *The Phila. Photographer*, Sep., 1885, p. 303.

N.B.—Here are six separate negatives definitely recommended, and apparently a suggestion that a still greater number might be better. The fact that all gradations of color can be reproduced with three negatives is distinctly discredited by this proposition, and was not admitted by Dr. Vogel until proved by me. Dr. Vogel should also have given Du Hauron credit for the idea of using different sensitizers in separate plates, since Du Hauron used chlorophyl in one plate and eosine in another several years before Dr. Vogel published his plan. F. E. I.

[2] *Anthony's Photo. Bulletin*, 1891, p. 681.

[This is a slander. F. E. I.]

[3] *Phila. Photographer*, 1885, p. 303.

[4] *Phila. Photographer*, 1885, p. 303.

[5] *Anthony's Photo. Bulletin*, 1892, p. 38.

N.B.—Some specimens since shown were made with three negatives instead of five or more, and the negative representing the red end of the spectrum is *not* printed with cyanine or its spectroscopical equivalent. No particulars are given, and there is no evidence that the results are obtained in accordance with any original idea of Dr. Vogel's. The printing colors appear to be those first proposed by me in 1888, although I have not had an opportunity to examine them spectroscopically. Cyanine or its spectroscopical equivalent would not answer for the print from a negative to represent the red sensation, because it transmits a great deal of red light, and absorbs considerable green light. F. E. I.

pure green light, and the one representing the blue-violet sensation with pure blue-violet light. The blending of the three images will excite exactly the same sensations as the light coming directly from the object itself. . . . The synthesis can also be made with superposed transparent color prints."[6]

[1] *A New Principle in Heliochromy*, Phila., 1889.

[2] *Journal of the Franklin Institute*, Jan., 1891, p. 13.

[3] *Journal of the Franklin Institute*, Jan., 1891, pp. 14, 15.

[4] *Journal of the Franklin Institute*, Jan., 1891, p. 16.

[5] *Journal of the Franklin Institute*, Jan., 1889, p. 57.

N.B.—Prussian blue and magenta red are spectroscopically very different from any color sensitizers I have used in carrying out the process, and their selection is entirely independent of, and bears no relation to, means for obtaining the negatives. See *Journal of the Franklin Institute*, Jan., 1891, p. 17. Colors like cyanine and malachite green, the only two mentioned by Dr. Vogel in the article quoted, cannot either of them be used successfully for this purpose. F. E. I.

[6] *Journal of the Society of Arts*, London, 1892, p. 690.

A TERRIBLE ACCIDENT.

ON the seventh of January last a terrible accident happened at Niagara Falls on the ledge leading to the Cave of Winds, the victims being two Philadelphia photographers,— Frank B. Warner, of 4012 Spruce Street, and Harry H. Howland, of Budd Street, West Philadelphia, both in the employ of Wm. H. Rau, the well-known Philadelphia photographer. The young men arrived on the New York Central on January the 7th, and registered at the Prospect House. They made a tour of the Falls during the morning to take observations for obtaining winter views of the ice bridges and magnificent ice scenery. In the afternoon with their photographing kits the two men descended the Biddle stairway to the ledge which leads to the Cave of the Winds. They had seen a photographer who afterwards turned out to be Henry A. Strohmeyer, of New York, down midway between the foot of the stairway and the cave, and hastened down to join him.

The water had poured down on the ledge at this poiut, making it very slippery and dangerous to cross. Strohmeyer had by a detour reached the other side. Immense icicles hung over this portion of the path. Warner and Howland asked the assistance of Strohmeyer and a young boy named Edward Farrell who was with him.

After the party had finished, Strohmeyer and the boy removed their traps first, and were assisting the Philadelphians to cross the slippery place, when one of them, Howland, lost his rubber down in a hole in the ice. He stopped to get it, and Warner said to him: "I will get it, Harry," and had stepped down into the hole when the icicle fell.

The boy Farrell was within three feet of the men, and his escape was most miraculous.

The Philadelphians were hurled down the embankment over 100 feet. Warner was seen by Strohmeyer, who was out of harm's way, to rise, and with blood streaming all over his face, try to crawl up the bank. Howland lay where he lodged.

Help was secured from Superintendent Welch, of the State Reservation, who, with a gang of rescuers, hoisted the two injured men to the top of the bluff. Warner had frightful gashes on his head and face, and bruises all over his body. Howland's arms were broken, also his collar bone, nose and shoulder. He was not expected to live.

Both men have been brought to Philadelphia, and we are pleased to state that both are on the road to recovery.

OUR ILLUSTRATIONS.—JANUARY AND FEBRUARY.

The Old Homestead, our frontispiece for January, a specimen of the latest Photo-Mechanical Reproduction process. The engraving was made by the Philadelphia Photo-Electrotype Company of Philadelphia, and is a steel-faced copper plate, which for softness and tint and clearness is equal to any steel engraving. This process opens up an entire new field for photographic reproductions, and, as usual, it is a Philadelphia firm which first presents it to the public.

Arctic Snap Shots.—Our extra illustrations for January were taken for us by Mr. William E. Meehan, Botanist of the Peary relief expedition, and are another instance of the great value of the camera in ethnological and geographical research. A comparison of the illustrations in any of the earlier works of Arctic explorations with the photographs taken on this expedition will show how unreliable were the sketches of the earlier explorers, who depended alone upon their brush and pencil.

February—Our Frontispiece.—An exquisite Blitz-pulver effect by J. Parker Rolfe, of Philadelphia. The scene is a domestic one, which appeals directly to the hearts of all, old and young, professional or amateur. On several former occasions we have presented to our readers specimens of Mr. Rolfe's artistic photography, all of which, however, are surpassed by the present effort. There is another feature to which we would call attention, viz.: the orthochromatic properties of Blitz-pulver, the gamut of colors in the subject running well through the whole range of the spectrum, from the dark red dress of the mother to the yellows and light blues of the ornamental screen.

The Old Apple Woman.—Another typical Philadelphia street scene, showing a well known local character, by James Wood, the well known artist and photographer. It is a happy hit, and will be appreciated not alone by the Philadelphian, but by the craft at large.

The next time a blooming amateur from abroad lets himself loose in English photographic circles, his status as a bagman will no doubt be investigated before much kindness and attention is showered upon him.

Photographic Scissors and Paste.

Photographers, Attention!— To stimulate the collection of photographs to be used in showing the need of improved roads in the United States, three prizes, aggregating $100 in gold, are offered as follows:

1. One prize of $50 (gold) for the best collection of not less than three photographs.

2. One prize of $30 (gold) for the second best collection of not less than three photographs.

3. One prize of $20 (gold) for the third best collection of not less than three photographs.

This offer is made subject to the following conditions and suggestions which should be observed:

All photographs must be accompanied by the negatives, unless the latter have been destroyed.

Competition will close on the first day of July, 1893, and all photographs must be submitted on or before that date.

Photographs must be confined to such subjects as most strongly illustrate the unfitness of the present public roads (especially common "dirt" roads) used as public highways.

To aid you by a suggestion, I would recommend the following as good subjects for competitive pictures:

Photographs showing the common spectacle of the farmer's team and wagon hub-deep and knee-deep in the muddy road.

Photographs showing rough, rutty and muddy roads in their worst condition.

"Stuck in the mud" photographs, showing the farmer or merchant with his loaded wagon vainly trying to drive his patient team and load out of the inevitable mud hole.

Photographs showing the everyday breakdown caused by rough or muddy roads or steep grades.

Photographs showing smooth, hard-surfaced roads and (if possible) teams hauling loads over the same.

And other pictures illustrating the goodness of good roads and the badness of bad roads. Your opportunities and observations will suggest the proper thing in this line.

Each photograph must be accompanied by a full statement of particulars, giving date, location, etc., by which the picture may be identified. Blanks for this purpose will be supplied on application.

All photographs and negatives submitted must be sent marked with a fictitious name or pseudonym, by which the competitor is to be known until the date of award. Each competitor must also send a sealed envelope containing his or her real name and address, and marked upon the outside with the fictitious name of the competitor.

All photographs and negatives submitted in this competition are to remain the permanent property of the League of American Wheelmen. At least ten people must compete in order to insure the reward here offered.

In deciding upon the respective merits of the work submitted, the following points will be considered :

1. The subject of the photograph and its force in illustrating the necessity for better roads.

2. Clearness and general excellence of photographic work.

3. Location (giving preference to those views which show bad roads in important counties, suburbs of large towns, etc.)

4. Size of photograhs. The question of size will be considered least and last of all. Any competitor may send more than three photographs if desired. The committee will select the *three best* of those submitted by each competitor.

The prizes will be awarded before July 15th, 1893, by a committee to be selected by the Executive Committee of the League of American Wheelmen. All communications will be in every respect confidentially treated, and further information will be furnished on application to the undersigned, to whom all photographs and negatives should be sent. Isaac B. Potter, Manager, Potter Building, New York City.

A New Fad.—The banjo and guitar craze is about over. In many homes lie banjos, guitars and mandolins unused and neglected. They are too valuable to give away, and they are too obtrusive in the odd nooks and corners where they are stowed.

What shall we do with them?

An ingenious young woman has answered the question. She hung her guitar on the wall and transformed it into a photograph holder by twisting and turning the strings so as to form loops and receptacles for her favorite pictures.

Of course the inevitable bright blue bow is conspicuous, and ribbon of a terra cotta shade on the handle of the guitar gives a contrast in

color that is effective. The young woman who uses gold paint will be sure to gild the musical photograph holder she will make upon reading this, but it looks prettier as it is.—*Boston Globe.*

Fiendish Act of a Drunken New York Photographer.—Edwin W. Ash, a photographer, 35 years old, who resides at One Hundred and Seventieth street and Kingsbridge road, was arraigned before Justice Voorhis in the Harlem Police Court charged with arson in the first degree.

Ash had been on a spree for over a month, and during that time had amused himself at intervals by abusing his wife and their child, a girl four years old. The drunken man reeled home at midnight last night, and as soon as he entered the frame shanty in which they live he began to beat his wife. He threw chairs and dishes at the poor woman, and dragged her all about the room by her hair.

Tiring of this pastime he attemped to beat her brains out, using as a weapon the fragments of a table which he had smashed to pieces in his drunken frenzy. Finally he snatched a lamp and hurled it at his wife's head. It struck the wall and immediately the burning oil set fire to the interior of the room. Ash then locked the outside door and placed his back against it, telling his wife that he intended to watch her burn to death. The woman screamed for help, and fortunately a passer-by heard them and sent an alarm to the Fire Department. Meanwhile the whole building was in flames, and Ash made his escape, leaving his wife to her doom. When the firemen arrived they battered down the door of the dwelling and rescued the woman, who fainted when taken out. She was badly burned, while the child, who was in her mother's arms, was uninjured.

Reducing the Blemishes.—A sallow-complexioned old lady, accompanied by a remarkably unprepossessing daughter, recently walked into an Austin photograph gallery.

"Be you the photograph man?" she inquired, wiping her spectacles and carefully adjusting them to the various spurs, dips, angles, and sinuosities of hhr Corinthian nose.

"Yes, ma'am," replied the artist in plate glass and chemicals; "can I do anything for you?"

"No, I'm too far over the bay to waste any mechanical genius on me. It's my daughter, Partheny, here, that I wants tuk."

"All right, madam, will you—"

"Can't yer soffen down her complexion a little, an' tone up her nose what was broke fallin' out of a winder?"

"I think so," replied the artist.

"An' kin yer wipe off them freckles?"

"Oh yes."

"I've seen photograffs of dead bodies of our relations, an' I've allers noticed that the picters flattered 'em clean out of sight. I know enough about the biz to recognize that you've got the whole thing in yer own hands, an' kin turn out a professional beauty or a jimpilcute of the first water, just as yer please. Do you think you kin reduce those ears a trifle—jest a leetle. I know Partheny has got big ears, but still she ain't no jack-rabbit. Partheny is a generous girl, as yer kin see by her ears."

"I think there will be no difficulty" ——

"How about that air squint in the left optic? Do yer think yer kin manage that?"

"Oh yes, I can touch it up with India ink?"

"What particular pose do yer think Partheny would take best in, full face or a side show?"

"You mean quarter view or a profile?"

"I guess I do. Yer see the photograff is goin' to a young feller what put an advertisement into a newspaper for correspondents, an' Partheny's writin' to him. Now yer see how necessary it is for the picter to kinder favor her little blemishes. You'll do the fair thing by Partheny, won't yer?"

"Certainly: what size, madam, cabinet or cards?"

"Which is the biggest?"

"Cabinet."

"Guess, then, we'd better try her on a cabinet."

"Ef the photograffer does a good job, the bigger the better. What's yer figgers?"

"Four dollars a dozen for cabinets."

"How much for one?"

"Same price. It is the negative that costs, not the number."

"Well, all right. You just go ahead an square them shoulders a little, an' bring the nose down fine, an' wipe off the freckles, an' straighten the eye, an' reduce the ears, an' whiten the complexion—an' the hair! It won't be red in the picter, will it?"

"Oh no. There will be no color shown but black."

"That's a comfort. Gracious! Partheny, what would he think ef yer sent him an oil paintin' taken from life! Kin I stay in the room?"

"Oh yes."

"All right. Strike an' attitood, Partheny, that won't give you away, an' we'll rope in that young man as sure as yer a foot high."—*Alex. E. Sweet, in Texas Siftings*.

Removal of the Great Washington Telescope Lens.—There was a very plain but very substantial looking pine box, tied up with numerous coils of rope, and nailed tight at all points, lying, yesterday morning, on the floor of a dingy and deserted room at the old Naval Observatory. The observation slit in the revolving dome had been closed and the great tube of the big 26-inch equatorial telescope was swung around and hung dejectedly alongside of its pedestal. The old sky-scraping workshop of the government had been closed up for good, and in the pine box on the floor was all that was valuable of the old telescope, the great 26-inch lens, some 250 pounds of quite ordinary looking glass, valued at $30,000. It was the last of the apparatus of the old observatory that was to be carried up to the new station on the heights above Georgetown, and there to be fitted to a new tube thet is being manufactured by Wagner & Swasey, of Cleveland.

The task of removing the great lens to the new observatory was one of the most delicate pieces of work in connection with the transfer of the station. The glass was packed in a special, wedged into place with folds of soft paper placed at regular intervals over its surface and allowing for expansion by heat, as in that case a tight-fitting box might "pinch" the glass, and change the perfect image which it now gives. This inner case was packed in the outer heavy box with plenty of soft packing in between the two, and then loaded carefully upon a thick matress in the bottom of a spring wagon. It was tied in place with several ropes, and rolls of packing were wedged between the box and the edges of the seat; and then, with three men sitting around it to prevent any possible slip, the wagon started off at a funeral pace, which was mrintained till the precious case was fairly landed at the new station on the hill.

The new mountings for the glass, which were to have been ready by the end of this month, were held back by the Homestead strike, and will probably not be received for three months more. There will be some changes in the mounting of the instrument, and the terrestrial clock will be run by weights instead of water power, as has been the case heretofore. This is one of the most important parts of the telescopic mechanism, as by it the great glass is swung round at a speed that just corresponds to the motion of the earth, keeping any particular point of the heavens constantly in the field, which is necessary in making measurements and for other purposes.

Photographing under water has actually been carried out, so it is said. Experiments made in 1889 in the Mediterraneean to ascertain how far daylight penetrates under water. In very clear water, near Corsica, and eighteen miles from land, the limit of daylight was found by means of photographic plates to be 1580 feet.

Photographed a Huge Meteor.—While photographing the Holmes comet at Ansonia, Conn., on Friday evening, John E. Lewis, an astronomer, was startled by a bright light at about 7.30 o'clock. Upon developing the plate, which had been exposed to the constellation Andromeda from 7.17 to 7.52, the trail of an immense meteor was discovered across the centre of the plate. The trail runs a little south of Beta and Romeda, and almost directly over Andromeda, and and runs in a northwesterly direction.

This meteor was seen by several persons within a radius of twenty miles of Ansonia, and is described as being intensely bright. It was seen to break, but was evidently too far away for the detonation to be heard. The chances of so bright a meteor crossing the centre of a small plate are go excedingly small that it is probably the first instance on record.

Mounting Drawings.—There is much in the way a drawing is mounted for preservation, and amateurs, instead of being careless about such matters, ought to take particular pains with them, for they are least able to judge of their or others' work when it is not isolated properly from the surroundings. Again, the greatest masters have not been ashamed to devote time and thought to the mounting of their sketches, and it is from a consideration of their practice that the following rules are derived. First, as it is almost imposible to keep the margins of the drawing clean while working on it, as soon as finished the margins should be cut off close with a sharp penknife. A steel ruler is useful for this operation. It should then be mounted on heavy board, white or tinted. If tinted, it is well to use a tone contrasting with that of the paper on which the drawing is made, but, it must be understood, always grayish or neutral. Similarily as to textures, if the drawing be a fine-grained paper, a rough grain will do well for the mount or mat, and vice-versa. To avoid puckering or warping of the mount, attach the drawing to it, not directly, but by the means of two little slips of gummed paper, one end of which will be stuck to the drawing, the other, turned down to the mount. The effect on a double mount may be given by tracing the edge of the drawing of the mount with a hard lead-pencil, and at a little distance drawing a second, enclosing rect-

angle, the space between the two to be filled with a pale wash o sepia or India ink. If the design is a vigorous charcoal, crayon or pen-and-ink drawing the enclosing lines may be drawn with the pen ; and in that case the inner one should be considerably heavier than the outer. The margins at the sides should be wider than those at top and bottom. If drawings are to be framed, it is ways desirable to have a mat made of heavy pasteboard covered with torchon or Whatman paper. In this case the trimming of the edges of the drawing may be dispensed with, as the edge of the mat comes directly against the drawing. Colored mats, as a rule, are to be avoided, but a rough gilt mat looks well with a drawing that is very effective or very strong in color. No other ornament than an inscribed line or two should be permitted on the mat, and the most suitable frame is a simple half-round moulding of oak.

Quaint Photo Frames.—Those who are skillful in the use of palette and brush can devise many pretty conceits for framing photographs. Pansies, daisies, roses, with the edges cut out in relief and finished with gilding, make a charming setting for a fair face. It is frequently necessary to cut a photograph in order to frame it to the best advantage. Matting-paper, which comes in sheets 30 by 36 inches, also in smaller sizes, is used for floral frames. They can be painted in water colors or in oil if turpentine is used as a medium. Draw a three or four leaf clover upon a sheet of matting-paper. For card-sized photographs the drawing should measure eighteen inches from the end of the leaf-stem to the tip of the leaf; each leaf should measure twelve inches at the largest part. When the leaves and stem have been cut out in relief, make an oblong opening in each leaf, through which the picture is to show. To hold the picture in place and strengthen the frame, a back of the exact shape of the front must be provided and fastened solidly on, except at each opening and one point upon the leaf where the picture is slipped in. The frame should be painted in natural tints, then all the edges should be delicately gilded. The frame may be suspended on the wall by the stem, but if you wish to pose it, easel-fashion, on the table, the back of the leaves and stem must be painted and gilded as well as the front. There are many attractive devices of the same description. A large autumn leaf or sunflower, the edges slightly silvered or gilded, looks well; also a monster butterfly, with a portrait appearing in each wing, or a peacock feather, a bunch of feathers with a photograph in each, would form a pretty group.

A charming mounting for the small "minette" photographs, now so popular, can be made by painting a spray of morning-glory vine and blossoms. Cut out the vine in relief, also the heart of the flowers, and in each opening let a head appear. This frame requires to be lined and strengthened at the back with some strong material. There are many combinations of thi sort in which floral Christmas cards can be utilized most successfully.—*Picture and Art Journal.*

The Framing of Pictures.—The following suggestions on framing of pictures are given in the *Art Amateur:*

Heavy framing for water-colors is favored by the Dutch and French aquarellists, especially those who use strong schemes of color and chiaroscuro. For framing small water-colors a gold mat of three inches in depth with an inch strip of polished oak is sometimes used with good effect.

Frame crayon portraits with a white mat bevelled on the inside edge. For a life-sized head on a stretcher of 17x20 allow above the top of the head four inches and at the side, in front of the eyes, five inches. For a less than life-sized head use the same proportions in relation to the size of the paper.

It is surprising how effective a surface covered with rubber cones is in diminishing jar or vibration, and this *Photographic Work* tells us, it had an instance not long ago, when it had occasion to take a box packed with optical and other physical apparatus on frequent railway journeys. In spite of the careful packing of the separate articles, there had been frequent and agragvating breakages, but the box, lid and all, was now lined with sheet rubber having conical projections a quarter of an inch high, and the articles were packed in a light inner box fitting into this lining. All trouble as regards breakage was now at an end, the inner casing being insulated against shock by being supported on the points of a number of soft rubber pyramids. This experience may afford useful hints to those making travelling cases for delicate photographic or other apparatus, or postal cases for sending negatives; the main point being to have no rigid connection between the inner and outer casings.

Novel Dark Slides.—An English firm has patented a new plate holder made of paper and just large enough to hold a single plate. With the new dark slides, which are made black or otherwise impervious to actinic light, a camera of smaller dimentions than heretofore can be employed for the exposure of plates of a given size. Moreover, the cost of such paper slides being exceedingly small, they may be

supplied ready fitted *on* the plates by the manufacturers, and may bear the imprint of their advertisement. In folding dark slides of wood, etc., the same firm patent the use o a rib of india-rubber fixed in a groove in the one part and entering a groove in the other part when the two leaves are closed together.

University Lecture Course.—F. Hopkinson Smith, the artist and author, delivered the first lecture of the course of the Lecture Association of the University of Pennsylvania yesterday afternoon in Association Hall. His remarks were a description and contrast of the extremes of realism and impressionism in art, and incidentally in literature, also, with brief reference to the middle ground. The formal topic of the lecture was "Half Way; the Middle Ground in Art."

Explaining the two styles of painting, Mr. Smith said realism was detailism, expressing every detail, leaving nothing for the imagination. Impressionism is generalizing as a whole, expressing the most salient features. Realism called a spade a spade, and said every nail and crack and the fibre of the wood in the handle should be painted. Impressionism says it is a mass of shadow, a something to make complete the whole, a word in a sentence.

"I catch a passing glimpse of a distant landscape from a railway train," said the speaker, "and carry the impression in my mind, and, if I can, place it on canvas. If I go back to ascertain the kind of trees on the hillside, or whether the rocks are stratified, the impression is undermined and sacrificed to realism. A picture given up to detail tells its story well, but it tells too much. Millet, when he shows you the Angelus, says, 'Come, see what I once saw. Did you ever see a scene like it?' As you look it grows into your memory."

Treating his subject from a more practical standpoint, Mr. Smith contrasted what two men of the different schools would see. "Take a landscape," he said; "there is a field of stubble in the foreground, separated from a farm house nestling beneath a clump of trees.

The background is a range of purple hills and a silver thread of a river. The realist must know the material composing the roof of the house and will paint each separate leaf on the elm trees, details invisible to the eye. The impressionist will paint what he sees." Mr. Smith proceeded to give briefly his conception of the middle ground, which gives a true impression.

In closing the speaker pointed out the parallel lines in modern art and literature, and described the realistic and impressionistic author. Speaking of the future and the tendency to condense, he said there

was danger of the writer of the future giving only a paragraph out of which to construct a chapter.

Electric Spark Photography.—The latest machine designed for use in electric spark photography gives quite remarkable results, states a writer in the New York *World*. Articles moving at the rate of 10,000 miles an hour can be photographed, and, by the introduction of a revolving mirror, a speed of 180,000 miles an hour can be coped with. The mirror makes 1024 turns every second, worked by electricity, which is about 150 times as fast as a rifle bullet travels. The whole photographic power of the spark is over in a time equal to the ten or eleven millionth part of a second, and it is during that incredibly brief space that the image is made on the sensitive plate.

Minneapolis Camera Club.—At the Club rooms Wednesday evening, January 11th, at eight o'clock, there was exhibited with the stereopticon, the second set of lantern slides of the American Lantern Slide interchange. This set was contributed by the members of the New Orleans Camera Club, the San Diego Camera Club, and the Oakland (Cal.) Camera Club. It is considered one of the most interesting sets this season.

To the Editor of AMERICAN JOURNAL OF PHOTOGRAPHY:

Having a short handed way of converting the gramme into troy grains without much trouble, I thought my method would prove acceptible and helpful to the photographic fraternity, where exactness is not absolutely required, but it will come true within a few grains. The plan is simply to add a nought to the number of grammes, then add 50 per cent. of the value, and you have the requisite number of grains; for example—the formula calls for 4 grammes, add an o=40 +50 per cent. of value or 20=60 grains. Of course where you come to large amounts the lacking two-fifths of a grain makes itself felt, but for ordinary photographic work the calculation is close enough.

JOHN R. CLEMONS.

Among the shoal of amateur photographic tourists who spread themselves over England during the past season—where one seems to have lost her heart, the other apparently lost his head.

In the Twilight Hour.

CASTLES are proud things, but 'tis safest to be outside of them.—*R. W. Emerson.*

ALL merely graceful attributes are usually the most evanescent.—*Hawthorne.*

THE rose on the cheek and the canker at the heart do not flourish at the same time; and he who has much to think of, must take many things to heart; for thought and feeling are one.—*Hazlitt.*

TRAGEDY is one of the imperishable forms of art, but it is particularly suited to the reproduction of antique or simple *subjects;* it is sculpture.—*Gerard de Nerval.*

THERE is this difference between happiness and wisdom; he that thinks himself the happiest of men, really is so; but he that thinks himself the wisest, is generally the greatest fool.—*Colton.*

WHEN we are young we are slavishly employed in procuring something whereby we may live comfortably when we grow old; and when we are old, we perceive it is too late to live as we proposed.—*Pope.*

THE desire of appearing clever often prevents our becoming so.—*La Rochefoucauld.*

CALL him wise whose actions, words, and steps are all a clear *because* to a clear *why.*—*Lavater.*

AS THE pearl ripens in the obscurity of its shell, so ripens in the tomb all the fame that is truly precious.—*Landor.*

EASINESS of disposition conciliates bad and good alike. It draws affections to it, and relaxes enmities; but that same easiness renders us too often negligent of our graver duties.—*Blake.*

WHATSOEVER is not detrimental to society, and is of positive enjoyment, is of God, the giver of all good things, and ought to be received and enjoyed by his creatures with thankful delight.—*Robert Burns.*

IMPUNITY often-times causes impudency, but fobearance is no acquaintance.

THERE is no such w to attain to greater measures of grace, as for man to live up to that little grace he has.

LITTLE sins multiplied become great. There is nothing less than a grain of sand—there is nothing heavier than the sands of the sea when multiplied.—*Excerpt from Thomas Brooks' Obituary, A.D.1680.*

MUSIC is the most delightful, rational entertainment that the human mind can possibly enjoy.—*Sidney Smith.*

WHERE necessity end scuriosity begins; and no sooner are we supplied with everything that nature can demand, than we sit down to contrive artificial appetites.—*Johnson.*

THERE's not one wise man among twenty will praise himself.—*Shakespeare.*

Wisdom consists not in doing what is directly before us, but in discerning those things which may come to pass.—*France.*

WHEN men grow virtuous in their old age, they only make a sacrifice to God of the devil's leavings.—*Pope.*

NO man should be so much taken up in the search of truth, as thereby to neglect the more necessary duties of active life; for after all is done, it is action only that gives a true value and commendation to virtue.—*Cicero.*

Literary and Business Notes.

LIESEGANG'S PHOTOGRAPHISCHER ALMANACH U. KALENDER FUR 1893. Dusseldorf, Germany. Ed. Liesegang's Verl Embellished with two portraits; a photogravure of the veteran Ludwig Schrank, and a process cut of Leon Vidal. This kalender, though the least bulky of all the annuals, is not deficient in valuable and practical information.

CHART FOR TESTING LENSES. The Bausch and Lomb Optical Co. have issued a chart 17x50 inches, made up of geometrically true squares, and lines in black and white. By its use the operator can easily make comparative tests of any lens or set of lenses. A copy of this chart d be in possession of every professional and advanced amateur who aspires to perfect work.

WILSON'S PHOTOGRAPHIC MAGAZINE for January, 1893, is issued in an entire new dress and make up, the whole presenting an attractive appearance. Another radical change is the return from a semi-monthly to a monthly edition, with a corresponding reduction in price. The Editor has our best wishes for the success of his new departure.

THE BRITISH JOURNAL PHOTO ALMANAC FOR 1893 has been received, and is fully up to the standard of previous years. It consists of 1235 pages, 300 of which are devoted to formulæ and information, and 54 short papers of interest by so many different photographic authorities. Probably the most important contribution is that o the Editor, J. Traill Taylor, who gives a summary on "Photo c Methods of Illustration." The almanac can be obtained at the publication office of the AMERICAN JOURNAL, 1030 Arch Street.

PUBLIC LEDGER ALMANAC, with compliments of Geo. W. Childs. The Philadelphia family stand-by, replete with useful and local information, a publication without which no well-regulated Philadelphia family is supposed to prosper. A new departure is made in the present year by the introduction of a number o photo half-tones, showing exterior and interior views of the Ledger building. The present year marks the twenty-fourth year of publicatiofi.

THE INTERNATIONAL ANNUAL O ANTHONY'S PHOTOGRAPHIC BULLETIN. A volume of helpful hints and experiences. Not the least important, in addition to the large number of formulæ and scientific tables, is the regular catalogue of societies, with a list of dark rooms in Great Britain, France and America. A number of fine illustrations embellish the volume, which we prophesy will have a large sale.

JOURNAL OF THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA. No. 1 o Vol. I., the first number of the new publication authorized by the Society. It is a neatly printed pamphlet of eight pages, which are to be increased as warranted by circumstances. The make-up of the Journal is in charge of a committee of which Mr. Edmund Stirling, an experienced journalist, is the chairman, and under whose fostering care the new periodical we expect will soon prove a bright luminary in the photographic horizon.

THE CHEMISTRY OF PHOTOGRAPHY. By W. Jerome Harrison. The Scovill & Adams Co., 423 Broome Street, New York. 400 pages with numerous illustrations. An important work, which should be in the hands of every photographer. The scope of the work is exhaustive, the text clear and comprehensive, while the general appearance does great credit to the publishers.

PHOTOGRAPHIC PATENTS.

ISSUE OF NOVEMBER 1ST, 1892.

485, 393,—Camera film-holder, Gustave D. Milburn, assignor to Photo Materials Company, Rochester, N. Y.

ISSUE OF NOVEMBER 8TH, 1892.

485,758,—Photographic copying. Clip for use in,—A. Delug, Munich, Germany.

ISSUE OF NOVEMBER 15TH, 1892.

486,397,—Camera shutter. G. Eastman, assignor to Eastman Kodak Co., Rochester, N. Y.

486,170,—Photographs from album leaves. Implement for removing,—W. R. Vansant, Philadelphia, Pa.

ISSUE OF NOVEMBER 22D, 1892.

486,831,—Flash-light apparatus. Joseph B. Lawson, assignor of one-half to A. Hemsley, Philadelphia, Pa.

486,748,—Photograph display-rack. Julius H. Abram, Akron, O.

486,606,—Scenic-effects. Apparatus for producing,—Francis Seymour, Paterson, N. J.

ISSUE OF NOVEMBER 29TH, 1892.

487,170,—Album. Anton Bartholme, Baltimore, M. D.

487,159,—Camera. Robert A. Ripley, Stamford, Conn.

486,913,—Photographic cameras. Registering device for,—John J. Geiger, Sr.,Chicago, Ill.

487,520,—Photographic roll-holder. Thomas S. Gillette, Evanston, Ill.

ISSUE OF DECEMBER 13TH, 1892.

487,833,—Camera-shutter. John W. Grantland, Philadelphia, Pa.

487,937,—Photographic printing apparatus and process. Ulysses S. Rush, assignor of two-thirds to H. L. Jenkins and W. G. Gosslin, Tacoma, Wash.

488,134,—Picture-exhibitor. David J. Rogers, assignor of two-thirds to M. W. Rogers, Lebanon, Ky., and T. T. Rogers, Perry, Mo.

488,042,—Picture-exhibitor. Alfred Svensson, Rockford, Ill.

ISSUE OF DECEMBER 20TH, 1892.

488,331,—Camera and photograph-exhibitor, combined. William V. Esmond, assignor of one-half to A. C. Kemper, Chicago, Ill.